



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

NOV 16 1987

SUBJECT: Ethoprop - EAB Science Chapter for Registration

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and

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THRU: Paul F. Schuda, Ph.D., Chief *Paul F. Schuda*  
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Attached is the Exposure Assessment Branch (EAB) science chapter for ethoprop prepared by Dynamac Corporation under supervision of EAB/HED. It includes Tasks I and II, a Table A, an executive summary, and recommendations. This science chapter is to be used to prepare the Final Registration Standard and Tolerance Reassessment (FRSTR) for ethoprop. The original Registration Standard was published in June, 1983.

Ethoprop is an insecticide and nematocide classified by EPA as a Restricted Use Pesticide. The end-use formulated products are registered as preplant and preemergence applications to terrestrial food and nonfood crops. Aerial application is permitted for granular formulations to potatoes.

The data requirements for the aerobic and anaerobic soil metabolism studies (162-1 and 162-2) are fulfilled; leaching and adsorption/desorption studies (163-1) are partially fulfilled; all other applicable environmental fate data requirements of 40 CFR §158.130 are not fulfilled. EAB requests that Rhone-Poulenc Inc., the registrant of pesticides products containing ethoprop as active ingredient be notified these existing data gaps need to be addressed.

The ethoprop Registration Standard requires the submission of ground water data. In the column study ethoprop was very mobile (43.5-84.9% of the leachate) in columns of loamy sand and loam soil.  $K_{des}$  values of ethoprop ranged from 1.97 to 14.18 in silt loam, a silty clay loam, and two sandy loam soils. The half-life of ethoprop was 84-112 days in the aerobic metabolism study in loamy sand soils. In the anaerobic metabolism study 79.1 to 58.2% of the applied [ $^{14}C$ ]-ethoprop degraded during 56 days. Additional studies required to assess the potential of ground water contamination are: hydrolysis, photolysis in water and soils and leaching of soil degradates, and field dissipation. The submitted data are incomplete to make a quantitative estimation of the potential for ground water contamination in the United States.

The due date for this science chapter was October 21, 1987. The due date was extended to November 12, 1987. The extension was granted because EAB did not receive the Use Index and Quantitative Usage Analysis information until September 10, 1987. The requirements for environmental fate studies fully depend on the use patterns under 40 CFR §158.130.

cc: Branch Chiefs/HED

TABLE A  
GENERIC DATA REQUIREMENTS FOR ETHOPROP

Data Requirement	Test Substance <sup>1</sup> / Use Pattern <sup>2</sup> / Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? (Yes or No) <sup>3</sup>
<u>§158.130 Environmental Fate</u>			
<u>DEGRADATION STUDIES-LAB:</u>			
161-1 - Hydrolysis	TGAI or PAIRA AB	No	None
<u>PHOTODEGRADATION:</u>			
161-2 - In Water	TGAI or PAIRA AB	No	None
161-3 - On Soil	TGAI or PAIRA A	No	None
161-4 - In Air	TGAI or PAIRA A	No	None
<u>METABOLISM STUDIES-LAB:</u>			
162-1 - Aerobic Soil	TGAI or PAIRA AB	Yes	MRID# 00160171
162-2 - Anaerobic Soil	TGAI or PAIRA A	Yes	MRID# 00160171
162-3 - Anaerobic Aquatic	TGAI or PAIRA N/A	No	None
162-4 - Aerobic Aquatic	TGAI or PAIRA N/A	No	None
<u>MOBILITY STUDIES:</u>			
163-1 - Leaching and Adsorption/Desorption	TGAI or PAIRA AB	Partially	MRID #00160172/73
163-2 - Volatility (Lab)	TEP A	No	None
163-3 - Volatility (Field)	TEP A	No	None

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§158.130 Environmental Fate (continued)					
<u>DISSIPATION STUDIES-FIELD:</u>					
164-1 - Soil	TPEP	AB	No	None	Yes
164-2 - Aquatic (Sediment)	TPEP	N/A	No	None	No
164-3 - Forestry	TPEP	N/A	No	None	No
164-4 - Combination and Tank Mixes	TPEP	N/A	No	None	No <sup>6/</sup>
164-5 - Soil, Long-term	TPEP	A	No	None	Yes <sup>7/</sup>
<u>ACCUMULATION STUDIES:</u>					
165-1 - Rotational Crops (Confined)	PAIRA	A	No	None	Yes <sup>8/</sup>
165-2 - Rotational Crops (Field)	TPEP	A	No	None	Yes <sup>9/</sup>
165-3 - Irrigated Crops	TPEP	N/A	No	None	No
165-4 - In Fish	TGAI or PAIRA	AB	No	None	Yes
165-5 - In Aquatic Nontarget Organisms	TPEP	N/A	No	None	No

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Data Requirement	Test Substance <sub>1</sub> /	Use Pattern <sub>2</sub> /	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? (Yes or No) <sub>3</sub> /
<u>\$158.140 Reentry Protection:</u>					
132-1 - Foliar Dissipation	TEP	AB	No	None	Yes
132-1 - Soil Dissipation	TEP	A	No	None	Yes <sub>10</sub> /
133-3 - Dermal Exposure	TEP	AB	No	None	Optional <sub>11</sub> /
133-4 - Inhalation Exposure	TEP	AB	No	None	Optional <sub>11</sub> /
<u>\$158.142 Spray Drift:</u>					
201-1 - Droplet Size Spectrum	TEP	AB	No	None	No
202-1 - Drift Field Evaluation	TEP	AB	No	None	Yes
<u>\$158.75 Human Exposure Data:</u>					
Other Exposure Data	TEP	AB	No	None	Yes

TABLE A  
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FOOTNOTES:

- 1/ Composition: TGA1 = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabelled; TEP = Typical end-use product.
- 2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food; C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor.
- 3/ Data must be submitted within the indicated timeframes, which begin on the date of the Guidance Document (see front cover for this date).
- 4/ Data on leaching of unaged ethoprop are acceptable. Additional data on leaching of soil degrades of ethoprop are required.
- 5/ Pending results of the laboratory volatility study (163-2).
- 6/ Currently not being imposed for this product.
- 7/ All data are required if the results from the aerobic soil metabolism/field dissipation studies show that >50% ethoprop remains in the soil prior to the recommended subsequent application.
- 8/ Supplementary data indicated [<sup>14</sup>C] ethoprop residues accumulated in rotational crops. Therefore a label restriction such as "Do not plant unregistered rotational crops for 8 months after last application" is needed. If ethoprop residue uptake in rotational crops occur after 12 months a tolerance petition must be submitted.
- 9/ Pending results of confined rotational crops study (165-1).
- 10/ Soil dissipation data are only required for those crops where agricultural practice involves human tasks where there would be direct exposure to pesticide-treated soil, as in the harvest of potatoes.
- 11/ The Agency does not require the submission of human exposure data, but will accept those data for review for establishment of field worker protection if submitted.